AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A high-density recording medium including one or more recording layers, the recording medium comprising:

a lead-in area including a disc information required for recording or reproducing data on or from the recording medium; and

a burst cutting area located at an inner area other than the lead-in area, the burst cutting area including ~~a plurality of~~ one or more data units;

wherein the disc information is included in ~~at least one~~ each of the data units when there is more than one data unit, the disc information includes at least a medium type information that identifies a type of recording layer in the recording medium and further wherein each data unit includes data of 4 rows including a sync field of 1 byte and an information field of 4 bytes, and parity of 4 rows including a sync field of 1 byte and a carrier field of 4 bytes, wherein the information field includes type information indicating at least one type of the following types: read-only, recordable, and rewritable.

2. (Previously Presented) The high-density recording medium according to claim 1, wherein the medium type information indicates that the recording medium is a writable medium or read-only medium.

3. (Previously Presented) The high-density recording medium according to claim 1, wherein each carrier field is preceded by sync information.

4. (Previously Presented) The high-density recording medium according to claim 3, wherein the disc information is recorded in a first data unit.

5. (Cancelled)

6. (Cancelled)

7. (Previously Presented) The high-density recording medium according to claim 1, further comprising:

a lead-out area having the control information.

8. (Previously Presented) The high-density recording medium according to claim 1, wherein the disc information further includes layer information.

9. (Previously Presented) The high-density recording medium according to claim 8, wherein the disc information further includes a sequence number to identify a data unit.

10. (Previously Presented) The high-density recording medium according to claim 8, wherein the layer information represents the number of layers included in the recording medium and is recorded in two bits.

11. (Cancelled)

12. (Previously Presented) The high-density recording medium according to claim 9, wherein the disc information further includes an application indicator to indicate use of a copy protection system.

13. (Previously Presented) The high-density recording medium according to claim 1, wherein the disc information further includes reflectivity information recorded in two bits and the reflectivity information indicates the reflectivity of the recording medium.

14. (Previously Presented) The high-density recording medium according to claim 13, wherein the reflectivity information is required for an optical power control or an automatic gain control when a data recording or reproducing operation is carried out.

15. (Previously Presented) The high-density recording medium according to claim 1, wherein the medium type information represents the type of a BD-ROM (BD-Read Only memory), a BD-R (BD-Recordable), or BD-RE (BD-Rewritable).

16. (Previously Presented) The high-density recording medium according to claim 1, wherein the data unit comprises a plurality of information bytes, the medium type information is included in at least one information byte.

17. (Previously Presented) The high-density recording medium according to claim 16, wherein the medium type information is included in the first information byte in each data unit.

18. (Currently Amended) A method for recording or reproducing data on or from a high-density recording medium including one or more recording layers, the method comprising:

identifying disc information recorded in a burst cutting area and lead-in area of the recording medium, the information including at least a medium type information that identifies a type of recording layer in the recording medium; and

controlling a data recording or reproducing operation, based on the identified information wherein the burst cutting area includes ~~a plurality of~~ one or more data units, the disc information being included in ~~at least one~~ each of the data units when there is more than one data unit, wherein the identifying step identifies the disc information by processing at least one of the data units and further wherein each data unit includes data of 4 rows including a sync field of 1 byte and an information field of 4 bytes, and parity of 4 rows including a sync field of 1 byte and a carrier field of 4 bytes, wherein the information field includes type information indicating at least one type of the following types: read-only, recordable, and rewritable.

19. (Previously Presented) The method according to claim 18, wherein the disc information further includes layer information to indicate the number of layers included in the recording medium, thereby identifying the number of layers of the recording medium.

20. (Cancelled)

21. (Cancelled)

22. (Previously Presented) The method according to claim 18, wherein the medium type information represents the type of a BD-ROM (BD-Read Only memory), a BD-R (BD-Recordable), or a BD-RE (BD-Rewritable).

23. (Currently Amended) The method according to claim 18, wherein the disc information includes reflectivity information of the recording medium [[is]] recorded in two bits, the reflectivity information controlling an optical power or an automatic gain for a recording or reproducing operation.

24. (Previously Presented) The method according to claim 18, wherein the identifying step identifies the disc information preferentially when the recording medium is loaded in a recording or reproducing apparatus.

25. (Previously Presented) The method according to claim 18, wherein the identifying step identifies the disc information in an early stage of recording or reproducing data on or from the recording medium.

26. – 34. (Cancelled)

35. (Previously Presented) The method according to claim 18, wherein the disc information includes a sequence number to identify a data unit, thereby identifying the data unit that includes the disc information.

36. (Currently Amended) The method according to claim 18, wherein ~~cutting area,~~ the method further comprises:

moving an optical pickup to read data recorded on the burst cutting area; and

processing the data recorded in the burst cutting area to identify the disc information.

37. (Previously Presented) The method according to claim 18, wherein the identifying step identifies the disc information at an early stage of a drive start-up procedure.

38. (Currently Amended) A method for recording or reproducing data on or from a high-density recording medium including one or more recording layers, the method comprising:

reading disc information recorded in a burst cutting area and lead-in area of the recording medium, the burst cutting area being located at an inner area other than a lead-in area, the burst cutting area including ~~a plurality of~~ one or more data units, the disc information being included in ~~at least one~~ each of the data units when there is more than one data unit and including at least a medium type information that identifies a type of recording layer in the recording medium; and

controlling a data recording or reproducing operation, based on the disc information, wherein each data unit includes data of 4 rows including a sync field of 1 byte and an information field of 4 bytes, and parity of 4 rows including a sync field of 1 byte and a carrier

field of 4 bytes, wherein the information field includes type information indicating at least one type of the following types: read-only, recordable, and rewritable.

39. (Previously Presented) The method according to claim 38, wherein each data unit comprises a plurality of information bytes, the disc information being included in at least one of the information bytes of the data unit.

40. (Previously Presented) The method according to claim 38, wherein the disc information further includes layer information to indicate the number of layers included in the recording medium, thereby identifying the number of layers of the recording medium.

41. (Previously Presented) The method according to claim 40, further comprising:

processing data included in at least one data unit to identify the disc information.

42. (Currently Amended) The method according to claim 41, ~~wherein the disc information is repeatedly included in each data unit,~~ wherein the processing step processes data included in each data unit to identify the disc information.

43. (Previously Presented) The method according to claim 38, wherein the medium type information represents the type of a BD-ROM (BD-Read Only memory), a BD-R (BD-Recordable), or a BD-RE (BD-Rewritable).

44. (Previously Presented) The method according to claim 38, wherein the disc information includes reflectivity information of the recording medium recorded in two bits, the reflectivity information controlling an optical power or an automatic gain for a recording or reproducing operation.

45. (Previously Presented) The method according to claim 38, wherein the disc information includes a sequence number to identify a data unit, thereby identifying the data unit that includes the disc information.

46. (Previously Presented) The method according to claim 38, wherein the reading step reads the disc information preferentially when the recording medium is loaded in a recording or reproducing apparatus.

47. (Previously Presented) The method according to claim 38, wherein the reading step reads the disc information in early stage for recording or reproducing data on or from the recording medium.

48. (Previously Presented) The method according to claim 38, wherein the reading step reads the disc information at early stage of drive start-up procedure.

49. (Previously Presented) The method according to claim 38, wherein the method further comprises:

moving an optical pickup to first read data recorded on the burst cutting area; and

processing the data recorded in the burst cutting area to identify the disc information.

50. (Currently Amended) An apparatus for recording or reproducing data on or from a high-density recording medium including one or more recording layers, the apparatus comprising:

an optical pickup; and

a controller operatively connected to the optical pickup and configured to identify disc information recorded in a burst cutting area and lead-in area of the recording medium, the information including at least a medium type information that identifies a type of recording layer in the recording medium and control a data recording or reproducing operation, based on the identified information wherein the burst cutting area includes ~~a plurality of~~ one or more data units, the disc information being included in ~~at least one~~ each of the data units when there is more than one data unit, wherein the apparatus identifies the disc information by processing at least one of the data units and further wherein each data unit includes data of 4 rows including a sync field of 1 byte and an information field of 4 bytes, and parity of 4 rows including a sync field of 1 byte and a carrier field of 4 bytes, wherein the information field includes type information indicating at least one type of the following types: read-only, recordable, and rewritable.

51. (Previously Presented) The apparatus of claim 50, wherein the disc information further includes layer information.

52. (Previously Presented) The apparatus of claim 51, wherein the layer information represents the number of layers included in the recording medium.

53. (Previously Presented) The apparatus of 52, wherein the disc information further includes an application indicator to indicate use of a copy protection system.

54. (Previously Presented) The apparatus of claim 50, wherein the disc information further includes reflectivity information recorded in two bits and the reflectivity information indicates the reflectivity of the recording medium.

55. (Previously Presented) The apparatus of claim 54, wherein the reflectivity information is required for an optical power control or an automatic gain control when a data recording or reproducing operation is carried out.

56. (Currently Amended) An apparatus for recording or reproducing data on or from a high-density recording medium including one or more recording layers comprising:

an optical pickup; and

a controller operatively connected to the optical pickup and configured to read, via the optical pickup, disc information recorded in a burst cutting area and lead-in area of the recording medium, the burst cutting area being located at an inner area other than a lead-in area, the burst cutting area including ~~a plurality of~~ one or more data units, the disc information being included in ~~at least one~~ each of the data units when there is more than one data unit and including at least a medium type information that identifies a type of recording layer in the recording medium and control a data recording or reproducing operation, based on the disc information, wherein each data unit includes data of 4 rows including a sync field of 1 byte and an information filed of 4

bytes, and parity of 4 rows including a sync field of 1 byte and a carrier field of 4 bytes, wherein the information field includes type information indicating at least one type of the following types: read-only, recordable, and rewritable.

57. (Previously Presented) The apparatus of claim 56, wherein the disc information further includes layer information.

58. (Previously Presented) The apparatus of claim 57, wherein the layer information represents the number of layers included in the recording medium.

59. (Currently Amended) The apparatus of claim 58, wherein the disc information further includes an application indicator to indicate use of a copy protection system.

60. (Previously Presented) The apparatus of claim 56, wherein the disc information further includes reflectivity information recorded in two bits and the reflectivity information indicates the reflectivity of the recording medium.

61. (Previously Presented) The apparatus of claim 60, wherein the reflectivity information is required for an optical power control or an automatic gain control when a data recording or reproducing operation is carried out.